



Redispatch and Curtailment Procedures, Version 9

Effective: 05/21/13

This Business Practice describes the **Redispatch and Curtailment Procedures**¹ on transmission system overloads and other reliability-related problems.

Version 9 incorporates in Section D the Circulation Procedure for the California Oregon Intertie (COI) and the Pacific DC Intertie (PDCI) Bulletin. When power flows on the COI or PDCI are nearing or exceeding **SOL**², BPA Transmission Services and the California Independent System Operator (CAISO), Los Angeles Department of Water and Power (LADWP) and WECC Reliability Coordinator (RC) may arrange to circulate power. The bulletin content has been rewritten to reflect current policy and procedures.

A. General Requirements & Procedures

1. Curtailment or Redispatch orders are initiated by BPA Transmission Services:

¹Measures taken to relieve transmission system overloads and therefore manage loading on the transmission system to within the Operating Transfer Capability (OTC).

²System Operating Limit: The value (such as MW, MVar, Amperes, Frequency or Volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. These include, but are not limited to: • Facility Ratings (Applicable pre- and post- Contingency equipment or facility ratings) • Transient Stability Ratings (Applicable pre- and post-Contingency Stability Limits) • Voltage Stability Ratings (Applicable pre- and post- Contingency Voltage Stability) • System Voltage Limits (Applicable pre- and post- Contingency Voltage Limits)

- a. When power flows are nearing or exceeding the established **System Operating Limit**¹ (SOL) for a **Flowgate**²;
 - b. When forecasted flow for the next hour exceeds the forecasted SOL for the next hour over the North of Echo Lake Flowgate;
 - c. In response to Curtailments initiated in other Balancing Authorities; or
 - d. If BPA Transmission Services determines that an emergency or unforeseen condition impairs or degrades, or threatens to impair or degrade, the reliability of the Transmission System.
2. BPA Transmission Services uses the following methods to reduce flow (in order of precedence):
- a. Switching actions (impedance changes) as defined in the relevant Dispatcher Standing Order (DSO).
 - b. Discretionary Redispatch pursuant to Attachment M of the OATT may be requested from BPA-PS.
 - c. Network Curtailment Calculator, which determines e-Tag energy profile reductions for Network Flowgates according to NERC curtailment priority and may include redispatch for Network Loads. Such redispatch includes NT Firm Redispatch pursuant to Attachment M of the OATT, and may include redispatch requested from Network Customers.
 - d. Intertie Curtailments using the Intertie Curtailment Tool when the above actions are insufficient to achieve relief on constrained Network Flowgates.
 - e. Emergency Redispatch from BPA-PS according to Attachment M of the OATT.

¹The value (such as MW, MVar, Amperes, Frequency or Volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. These include, but are not limited to: • Facility Ratings (Applicable pre- and post- Contingency equipment or facility ratings) • Transient Stability Ratings (Applicable pre- and post-Contingency Stability Limits) • Voltage Stability Ratings (Applicable pre- and post-Contingency Voltage Stability) • System Voltage Limits (Applicable pre- and post- Contingency Voltage Limits)

²Flowgate (Cutplane): Transmission lines and facilities owned by BPA on a constrained portion of BPA's internal network transmission grid or transmission lines and facilities owned by BPA and one or more neighboring transmission providers that are interconnected and the separately owned facilities are operated in parallel in a coordinated manner, and each of the owners has an agreed upon allocated share of the transfer capability.

3. Generating facilities that are unable to modify operation due to a *force majeure* when given a [Reliability Order](#)¹ must immediately notify BPA Transmission Services' Dispatch by phone.
4. All Customers that submit schedules must submit e-Tags that meet scheduling requirements and submit Generation Estimates consistent with those requirements.
5. All generating facilities interconnected to or taking transmission service from BPA Transmission Services are subject to the Failure to Comply Penalty as provided in Section II.B of the [General Rate Schedule](#) Provisions.

B. Redispatch Procedures

1. BPA Transmission Services can request Redispatch, pursuant to Attachment M of BPA's Tariff, prior to Curtailment of any Firm or Non-Firm e-Tags to avoid the Curtailment. This can include Discretionary Redispatch or Redispatch from resources other than the federal hydro system. Redispatch will be requested by a phone call from BPA Transmission Services' Dispatcher (Dispatcher).
2. In all cases, the generation estimate used for Generation Imbalance calculations will be adjusted to reflect the Redispatch order.
3. Redispatch will not result in changes to the original e-Tags.
4. There are currently three types of Redispatch under Attachment M of the OATT:
 - a. Discretionary Redispatch
 - i. BPA Transmission Services may request Redispatch from BPA-PS prior to curtailing any firm or non-firm PTP e-Tags or secondary NT e-Tags in order to avoid or reduce curtailments.
 - ii. The Dispatcher will request Discretionary Redispatch from BPA-PS by phone call.
 - iii. BPA-PS may decline to provide Discretionary Redispatch.
 - b. NT Firm Redispatch
 - i. BPA Transmission Services can order NT Firm Redispatch from BPA-PS to avoid or reduce curtailment Firm NT e-tags. This would happen only after BPA Transmission Services has Curtailed Non-Firm PTP e-Tags and secondary NT e-tags in a sequence consistent with the NERC Curtailment priority.

¹Instructions issued to a generator to modify plant output or instructions to load to shed load.

- ii. The Dispatcher will order NT Firm Redispatch from BPA-PS by phone call specifying that the purpose is for NT Firm Redispatch. BPA-PS must provide NT Firm Redispatch to the extent that it can do so without violating non-power constraints.
- c. Emergency Redispatch
 - i. BPA Transmission Services can call on Emergency Redispatch from BPA-PS when it declares a transmission system emergency. BPA-PS must provide Emergency Redispatch.

C. Curtailment Procedures

1. In addition to BPA Transmission Services' **Redispatch Order**¹, Customers must follow any subsequent Reliability Orders, such as Curtailments.
2. BPA Transmission Services will communicate Curtailments by e-Tag.
 - a. For in-hour Curtailments, and for prior-to-the-hour Curtailments on the North of Echo lake Flowgate, BPA Transmission Services will use the Network Curtailment Calculator to determine which e-Tags will be cut for an Internal Flowgate and will use the Intertie Curtailment Tool to determine which e-Tags will be cut for an intertie. For internal Flowgates, e-Tags with impacts greater than 10% on the Flowgate being managed will be considered for Curtailment.
 - b. The generator indicated on the e-Tag must modify its operations appropriately.
 - c. For generating facilities that do not monitor e-Tags, the Purchasing Selling **Entity**² (PSE) listed on the e-Tag is responsible to inform the generator of the necessary actions to take.
 - d. For in-hour Curtailments, generating facilities must move to the new schedule within 10 minutes following the e-Tag Curtailment. For prior-to-the-hour Curtailments on North of Echo Lake, generating facilities must move to the new schedule during the normal hourly ramp.
 - e. Load Serving Entities (LSE) must re-supply generation or shed load in response to curtailed e-Tags.

¹Order from BPA Transmission Services to dispatch, curtail, redispatch, limit output, or shed load.

²A load, generator, generation provider, Transmission Customer, or other party.

3. E-Tag Curtailments initiated by other Reliability Entities and approved by BPA Transmission Services are Reliability Orders to generating facilities, loads and Customers within the BPA Balancing Authority Area.
4. For in-hour curtailments, and for prior-to-the-hour Curtailments on the North of Echo Lake Flowgate, BPA Transmission Services will curtail all Non-Firm PTP and NT schedules according to NERC Curtailment priority (1-NS, 2-NH, 3ND, 4NW, 5NM, 6-NN (including 6-CF), and 7-F) on a pro-rata basis using e-Tags.
5. For in-hour Curtailments, and for prior-to-the-hour Curtailments on the North of Echo Lake Flowgate, BPA Transmission Services will curtail 7-F schedules and order generating facilities that have obligation to redispatch at the request of BPA Transmission Services under Attachment M of the OATT to provide NT Firm Redispatch on a pro-rata basis if the overload persists. BPA Transmission Services will curtail 7-F in proportion to the 7-F flow on the affected flowgate and request NT Firm Redispatch in proportion to the 7-FN and unscheduled Firm NT flow on the affected Flowgate.
6. If a generator within the BPA Balancing Authority Area is operating at its minimum generation level within the **Operating Hour**¹, and e-Tag Curtailments occur within that Operating Hour, the generator shall move completely offline, even if the Curtailment is relatively small in proportion to the generation for that Operating Hour.
7. A generator that does not reduce is subject to BPA Transmission Services' **Failure to Comply Penalty**², as provided in Section II.B of the General Rate Schedule Provisions.
8. A generator that has received **Operating Reserves**³ from BPA Transmission Services but has not recovered sufficient generation to meet schedules following the expiration of the reserves must reduce or re-supply the schedules for the succeeding hours. If the generator or PSE is unable to reduce or re-supply schedules to match the reported generation estimate, BPA Transmission Services will, at **Customer**⁴ request, curtail e-Tags to match the reported generation estimate.
9. System emergencies or other unforeseen conditions may require Dispatchers to deviate from the pro-rata Curtailment principles in order to maintain reliability.
 - a. In those circumstances, BPA Transmission Services will coordinate schedule changes or generation changes as necessary in order to maintain system reliability (situation specific).

¹The current hour. Also defined as the Clock Hour.

²The consequences of non-compliance as defined in the Failure to Comply Business Practice in effect at the time.

³(Also called Contingency Reserves) The combination of Operating Reserve-Spinning Reserve Service and Operating Reserve-Supplemental Reserve Service. Fifty percent of Operating Reserves Services must be Spinning Reserves Services.

⁴Any customer taking service under Use of Facilities (UFT), Formula Power Transmission (FPT), Integration of Resources (IR), Part II or Part III of the OATT.

- b. Such non-pro-rata Curtailments should last no more than two hours after the start of the event. If necessary, Pro-rata Curtailments will be used beyond that time.

D. Circulation Procedure for the California Oregon Intertie (COI) and the Pacific DC Intertie

1. When power flows on the COI are nearing or exceeding SOL, BPA Transmission Services and the California Independent System Operator (CAISO), Los Angeles Department of Water and Power (LADWP) and WECC Reliability Coordinator (RC) may arrange to circulate power on the PDCI to lower power flows on the COI. Customers and/or other firm transmission rights holders will not be notified of circulation.
 - a. BPA Transmission Services and CAISO will not curtail any e-Tags if the circulation reduces flows on the COI below OTC.
 - b. In the event that circulation is not available (or not effective) and power flows remain above OTC limits on the COI, curtailments will occur.
2. When power flows on the PDCI are nearing or exceeding SOL, BPA Transmission Services and the California Independent System Operator (CAISO), Los Angeles Department of Water and Power (LADWP) and WECC Reliability Coordinator (RC) may arrange to circulate power on the COI to lower power flows on the PDCI. Customers and/or other firm transmission rights holders will not be notified of circulation.
 - a. BPA Transmission Services and LADWP will not curtail any e-Tags if the circulation reduces flows on the COI below OTC.
 - b. In the event that circulation is not available (or not effective) and power flows remain above OTC limits on the PDCI, curtailments will occur.
 - c. If the power flows are in a north to south direction, LADWP will initiate the curtailments.
 - d. If the power flows are in a south to north direction, BPA Transmission Services will initiate the curtailments.

E. Additional Information

Bulletin

- Circulation & Counter Schedule Procedures for AC/DC Interties

Policy References

- [OATT](#): Sections 13, 14, 16, 17, 18, 19, 22, 29, Attachment M

- NERC Reliability Standard, TOP-001-1
- WECC Minimum Operating Reliability Criteria (MORC): Section 3.B.1
- NERC e-Tag timing specification
- [Transmission & Ancillary Service Rate Schedules](#): Section II, B. and Section III.B

Related Business Practices

- Requesting Transmission Service
- Scheduling Transmission Service
- **Generation Imbalance Service**¹
- Operating Reserves

Version History

Version 9	05/21/13 Version 9 incorporates in Section D the Circulation Procedure for the California Oregon Intertie (COI) and the Pacific DC Intertie (PCDI) Bulletin. The bulletin content has been rewritten to reflect current policy and procedures.
Version 8	<p>02/13/13 Version 8 incorporates throughout the document prior-to-the-hour Curtailment procedures for the North of Echo Lake S>N Flowgate and clarifies that the request of Discretionary Redispatch by BPA Transmission Services is a discretionary action. Specific changes include:</p> <p>Section A</p> <ul style="list-style-type: none">• Step 1.a: Replaced "Operating Transfer Capability (OTC)" with "System Operating Limit (SOL)"• Added step 1.b• Step 2.b: Deleted Power Services' and added "maybe requested from BPA-PS" <p>Section B</p> <ul style="list-style-type: none">• Step B.1: Replaced "order" with "request"; added "pursuant to Attachment M of BPA's Tariff"; and deleted "Point-to-Point (PTP) and "(or secondary network (NT) e-Tags)"• Step B.2: Replaced "order" with "request"• Step B.4.a.i: Added "or reduce" and deleted "any"

¹The Generation Imbalance component of Variable Energy Resource Balancing Service (VERBS).

	<ul style="list-style-type: none"> • Added step B.4.a.iii • Step B.4.b.i: Deleted "Power Services" and "maintain" and added "avoid or reduce curtailment" and "This would happen only" • Step B.4.b.ii: Added "NT Firm" and "BPA-PS must provide NT Firm Redispatch to the extent that it can do so without violating non-power constraints." • Step B.4.c.i: Added "from BPA-PS", "transmission" and "BPA-PS must provide Emergency Redispatch." <p>Section C</p> <ul style="list-style-type: none"> • Step C.2.a: Added "and for prior-to-the-hour Curtailments on the North of Echo Lake Flowgate" and "will use" • Step C.2.c: Replaced "who" with "that" • Step C.2.d: Added "For in-hour Curtailments" and "For prior-to-the-hour Curtailments on North of Echo Lake, generating facilities must move to the new schedule during the normal hourly ramp." • Step C.4 and C.5: Added "and for prior-to-the-hour Curtailments on the North of Echo Lake Flowgate" • Step C.6: Replaced "load" with "generation" • Step C.8: Added "or re-supply"
Version 7	Version 7 was out for comment through December 31, 2012. Version 8 was out for comment and the final updates posted before the responses to Version 7 were completed.
Version 6	10/19/12 Version 6 clarifies in step C.2.a the level of Flowgate impacts an e-Tag must have to be considered for Curtailment.
Version 5	09/14/12 Version 5 adds "3ND, 4NW, 5NM" and "For in-hour curtailments" to step C.4 and "For in-hour curtailments" to step C.5.
Version 4	12/02/10 Version 4 of this business practice includes the following changes: • Step 3.4: Added "that submit schedules". • Step 5.5: Replaced Firm PTP with 7-F, replaced Firm NT with 7-FN, added "and unscheduled Firm NT" and deleted "Pursuant to Attachment M of the OATT".
Version 3	01/28/10 The purpose of this revision is to include language on Discretionary Dispatch and eliminate outdated information on the Reliability Redispatch Pilot. This is an extensive revision to Version 2 of this business practice. Therefore, Transmission Services has not displayed the edits.
Version	07/17/09 The purpose of this revision is to add language reflecting the current

2	automation and scheduling procedures, North American Electric Reliability Council (NERC) Reliability Standards, the Failure to Comply Penalty, and incorporate the Communication of Curtailments Bulletin, posted September 9, 2008.
Version 1	08/17/01 Revision dated August 17, 2001: The purpose of the revision to Redispatch and Curtailment Procedures business practice is to delete section A.3 and section A.4 because the requirements are specified in the Reservation and Scheduling Procedures business practice and in contradiction with what is stated in the Load and Resource Forecast business practice.